

REMARKS

Applicants have carefully considered the February 24, 2005 Office Action, and the amendments above and these remarks are presented in a bona fide effort to address all issues raised in that Action. For reasons discussed below, it is believed that this case is in condition for allowance, and prompt favorable reconsideration is solicited.

It is noted that the Examiner has maintained the restriction requirement. Although the various groups of claims may be patentably distinct for examination purposes, it should be noted that Applicants are not in agreement with the Examiner's characterization of the subject matter of the various claim groups and the associated relationships between the claim groups. Comments regarding the restriction and the responsive election should not be used to construe any of Applicants' claims.

The Office Action included an objection to the original title, as not adequately descriptive. Applicants have changed the title to "Data Recording/Reproducing with Different Data Conversion for Each Updating of Data on a Rewritable Medium." It is respectfully submitted that this title is descriptive of the disclosed subject matter. Applicants therefore request that the Examiner withdraw the objection to the title.

The Office Action indicated that the specification had not been checked for possible minor errors and requested correction of any errors that might be noted. In response to this request, minor corrections are made to perfect grammar on page 22, and the abstract has been revised to provide a better narrative description of the disclosed technology. Applicants are not aware of any other points where improvement or correction seem necessary at this time. Of course, corrections may be made upon request, if specific points are later identified by the Examiner.

The other issues raised in the Office Action relate to patentability (novelty and unobviousness) of the subject matter of the elected claims over a cited patent and a published application. Before addressing specific claim distinctions, it may be helpful to summarize the subject matter under consideration here.

Rewriteable recording media, such as DVD-RAM discs and the like, can be rewritten multiple times. However, repeated writing to the same place on the disc causes deterioration of the disc material, which may make it impossible to record and reproduce data normally. The problem worsens if the same data is written to the same place on the medium multiple times (specification, page 2, lines 21-23). As disclosed in the present application, this problem is mitigated by superposing different data on the data to be recorded to produce different converted data, every time data is recorded to the medium, so that the converted data written to an area of the medium is different every time data is written to that area. In a disclosed example, an initial value is varied to generate different scrambling data every time, and this scrambling data is superposed on the data to be recorded. Furthermore, additional information may be embedded in the initial value at this time and recorded together with the data. Attention is directed to the second paragraph of the 'Summary' (bridging pages 2 and 3) of Applicants' specification. By performing a different data conversion (using different data conversion information) for each updating or new recording operation, the recording causes less damage even if data is recorded repeatedly in the same place, because different converted data is recorded to that place each time (see e.g. second full paragraph on page 24 of Applicants' specification).

As discussed more below, the applied documents teach encrypted recording of data on a medium. However, it is not seen where any of those documents suggest different data conversion or using different data conversion information for each updating or new recording of

data to a rewritable medium. More specific comments on the rejections and patentability of the claims follow.

Claims 1-6, 8, 13-18, 20-25 and 31-36 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,687,828 to Sako et al. (hereinafter Sako). Of the claims included in this first rejection, claims 1, 3, 8, 14, 22, and 32 have been cancelled. Independent claims 2, 13, 20 and 31 have been amended to distinguish over Sako, and where appropriate, the dependent claims have been revised to conform to the amended independent claims. The rejection is traversed, and it is submitted that the pending versions of claims 2, 4-6, 13, 15-18, 20, 21, 23-25, 31 and 33-36 are novel over (not anticipated by) the Sako patent.

Independent claim 2 relates to a data recording method for recording data on a rewritable recording medium. The claim recites a step of “data-converting data to be updated and recorded on a recorded area on the recording medium to form different data-converted data by superposing thereon information generated on the basis of data conversion information for every updating.” It is respectfully submitted that the Sako patent does not disclose this claimed step.

Sako is particularly interested in copy protection. In Sako, a playback information appendage circuit 14 data-converts the original information by ciphering, responsive to key information. After error correction by coding circuit 16 and modulation by circuit 17, a synchronization appendage circuit 18 appends synchronization signals. The output signal from the synchronization circuit 18 is sent to a recording head 19 and recorded on a data recording medium 101. Attention is directed to column 3, lines 23-46. Sako employs part of the sector address for data conversion for ciphering, so that the ciphered playback mode information is varied from sector to sector to improve prevention of alteration or unauthorized use (see e.g. column 5, lines 10-13). Apparently, the key information is written to an area of the medium (column 5, lines 34-53).

As Applicants noted in the original specification for this case, “Because the sector ID corresponds to an address on the disc, in the same place on the disc, the same scrambling data is always generated and when the main data is the same, and the same data is recorded on the disc every time.” Attention is directed to page 22, lines 12-16. The method of claim 2 avoids problems caused by writing the same data at the same place multiple times, by writing with different converted data every time. It is believed that the Sako technique, which employs part of the sector address for data conversion for ciphering, does not satisfy the claim requirement for the data-converting “to form different data-converted data by superposing thereon information generated on the basis of data conversion information for every updating,” as now recited in claim 2. As a result, Sako does not teach “recording ... different data-converted data on the recording medium,” as also recited in the claim.

Since the Sako patent does not meet the noted limitations of independent claim 2, that claim and the claims that depend from it are novel over Sako, and the anticipation rejection of those claims should be withdrawn.

Amended claim 13 recites a step of “generating different data conversion information to be updated and recorded on a recorded area on the recorded medium every updating of data recorded on the medium.” The medium has converted data recorded on it, and that converted data has been “data-converted by having superposed thereon information generated on the basis of the data conversion information” (see preamble). As noted above, the Sako technique employs part of the sector address for data conversion for ciphering. Assuming Sako’s technique were used for repeated writing of data to the same place on the medium, use of the same key (related to the sector address) would be used for every writing of data to the same sector. Hence, Sako does not teach generating different data conversion information for every updating of data recorded on the medium, as in claim 13. Since the Sako patent does not meet the noted

requirement of independent claim 13, that claim and the claims that depend from it are novel over Sako, and the anticipation rejection of those claims should be withdrawn.

Independent claim 20 is an apparatus claim. The apparatus includes a converter for producing data-converted data. Specifically, the converter generates different data conversion information to be updated and recorded on a recorded area on the recording medium every updating, and the converter superposes information generated on the basis of the data conversion information on data to be updated and recorded. Sako's use of key information, based at least in part on sector address information, will not satisfy the claim requirement that the converter generates different data conversion information for every updating to an area on the recording medium. For any one sector on the medium, the portion of the sector address used in Sako's ciphering is the same. Since the Sako patent does not meet the noted requirement of independent claim 20, that claim and the claims that depend from it are novel over Sako, and the anticipation rejection of those claims should be withdrawn.

Independent claim 31 relates to a reproducing apparatus. However, as amended, the claim specifically requires that the apparatus is for "generating different data conversion information to be updated and recorded on a recorded area on the recorded medium every updating." The recording medium bears converted data, which has be "data-converted by having superposed thereon information generated on the basis of the data conversion information." Sako teaches converting data based on key information, for example, using a portion of the sector address. It is respectfully submitted, however, that Sako does not generate different data conversion information for every updating on a recorded area on the recorded medium, as claimed. Since the Sako patent does not meet the noted requirement of independent claim 31, that claim and the claims that depend from it are novel over Sako, and the anticipation rejection of those claims should be withdrawn.

For the reasons discussed above, it is respectfully submitted that pending claims 2, 4-6, 13, 15-18, 20, 21, 23-25, 31 and 33-36 are novel over the Sako patent.

Claims 7, 9-12, 19, 26-30 and 37 were rejected under 35 U.S.C. § 103 as unpatentable over Sako in combination with U.S. Patent No. 6,587,948 to Inazawa et al. (hereinafter Inazawa).

Of the claims included in this second rejection, claims 7, 10, 12, 19, 26, 28, 30 and 37 have been cancelled. Independent claims 9 and 27 have been amended to distinguish over Sako. The rejection is traversed, and it is submitted that the pending versions of claims 9, 11, 27 and 29 are patentable over the proposed combination of Sako and Inazawa.

Independent claim 9 includes a step of “generating different data conversion information to be updated and recorded on a recorded area on the recording medium every updating.” The disclosure of Sako has been discussed above. It is respectfully submitted that the ciphering in the Sako method does not generate different data conversion information for every updating, since the key apparently uses a portion of the sector address which would be the same each time data is updated to the same sector. Modification of the Sako technique in view of Inazawa would not result in a method that generates different data conversion information for every updating, as claimed. Like Sako, Inazawa discloses that data to be recorded to a recording medium can be data-converted for ciphering in response to data conversion information (key information), but Inazawa similarly fails to teach generating different data conversion information to be updated and recorded on a recorded area on the recording medium, for every updating. Hence, any method produced by combining Sako et al. and Inazawa would still not meet the requirements for the claimed generating step. Since the combination of Sako and Inazawa would not meet the claim as a whole, the claim (9) should be patentable over that combination. Dependent claim 11 should be patentable for similar reasons.

Independent claim 27 is an apparatus claim. However, claim 27 now recites that a function of the signal processing circuit is “generating different data conversion information to be updated and recorded on a recorded area on the recording medium every updating.” This function corresponds to the above-discussed generating step of claim 9. Hence, claim 27 and dependent claim 29 should be patentable over Sako and Inazawa for at least the same reason as is claim 9.

For the reasons discussed above, it is respectfully submitted that pending claims 9, 11, 27 and 29 are all patentable over Sako and Inazawa.

It is respectfully also submitted that pending claims 2, 4-6, 13, 15-18, 20, 21, 23-25, 31 and 33-36, which are novel over the Sako patent, also are patentable over Sako and Inazawa. Inazawa only teaches using a key to encrypt data being recorded. This is not enough to make up for the deficiencies in the disclosure of Sako. It is submitted that the addition of Inazawa would not result in a modification of the Sako method or apparatus that would meet the above-discussed limitations of any of independent claims 2, 13, 20 and 31.

Claim 44 is a new independent method claim. It is respectfully submitted that this new claim also is patentable over the documents applied in the art rejections. The method of claim 44 includes a step of data-converting data to be recorded on the recorded area. As claimed, this conversion uses data conversion information different from data conversion information previously applied to produce the data previously written on the recorded area. Hence, the resulting data-converted data is different from the data previously written on the recorded area. It is not seen where either Sako or Inazawa suggests using data conversion information different from data conversion information previously applied to produce the data previously written on any particular recorded area. Hence, neither document alone nor the combination thereof proposed in the obviousness rejection would meet all the limitations of new claim 44. It is

therefore submitted that new claim 44 is novel and unobvious over the art applied in the Office Action.

Upon entry of the above amendment and/or for the reasons outlined above, claims 2, 4-6, 8, 9, 11, 13, 15-18, 20, 21, 23-25, 27, 29, 31, 33-36 and 44 should be patentable over the art. It is believed that this response addresses all issues raised in the February 24, 2005 Office Action. However, if any further issue should arise that may be addressed in an interview or by an Examiner's amendment, it is requested that the Examiner telephone Applicants' representative at the number shown below.

To the extent necessary, if any, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP



Keith E. George
Registration No. 34,111

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8603 KEG:apr
Facsimile: 202.756.8087
Date: May 16, 2005

**Please recognize our Customer No. 20277
as our correspondence address.**